

REMARKS

This Amendment responds during a first month extension period to the Office Action dated 05/12/05. My executed PTO-2038 form is submitted herewith to authorize payment of the \$60.00 fee for this extension.

The Office Action rejected Claim 8 under both 35 USC 102 and 35 USC 103 as being anticipated by or obvious over the Talley patent 4,118,316. The rejection noted that if a difference existed between the claimed matter and the Talley disclosure, it would reside in optimizing the Talley elements, for enhancing the Talley separation.

Applicant believes this rejection is improper, particularly with respect to the amended Claim 8, for the following reasons.

The amended claim 8 notes that the stationary phase includes ion bearing and hydrophobic functional groups that are connected together, with only the ion bearing group being attached to the stationary phase support surface. This provides that the hydrophobic functional group is then connected relative to the support surface, via its connection to the ion bearing functional group, and forms a

permeable stationary layer shielding the ion bearing group from full contact with the related HPLC mobile phase.

Talley relates to molecular exclusion chromatography or gel filtration, where there is no attractive interaction between the stationary phase and solute. Instead, molecular exclusion occurs due to the size of molecules, where larger molecules pass through the stationary phase at a faster rate than smaller molecules. On the other hand, the claimed invention relates to adsorption separation, where attractive equilibration between the mobile and stationary phases provide for solute separation; and the molecule sizes are of no concern.

The Talley disclosure further limits the hydrocarbon chain to between one and four carbon units, while the claimed hydrophobic functional group is comprised as long hydrocarbon chains of possibly ten plus carbon units. The claimed arrangement thus is not only totally different from the Talley arrangement; but as Talley specifically set the lower carbon unit limits, it appears inappropriate to reject the claim on the basis that it would be obvious to "optimize" the Talley elements to achieve the claimed arrangement. In fact, the undersigned believes that if Talley's restricted carbon chain were "optimized" to have a longer carbon chain, such would lead to problems in

achieving a reliable size-exclusion process. Accordingly, the undersigned respectfully urges that the Talley rejection is overcome and should be removed.

The Office Action further rejected Claim 8 under 35 USC 103 as being unpatentable over Ayers in view of O'Gara. The rejection suggested that as Ayers showed a stationary phase with a hydrophobic group as a ligand, and as O'Gara showed octadecyl and octyl groups as traditional reverse phase ligands in use for the past 30 years, it would be obvious to use the traditional reverse phase ligands of the octadecyl and octyl groups in Ayers. Although not stated, this modified combination presumably then would anticipate and/or function the same as the stationary phase of Claim 8.

However, applicant believes this rejection is also improper with respect to the amended Claim 8, for the following reasons.

The Ayers stationary phase utilizes ion bearing and hydrophobic functional groups connected together; however the connection is in a manner opposite to that of the claimed invention, where the Ayers hydrophobic group is bonded to the stationary phase surface and the ion bearing group then overlies the hydrophobic group. However, Ayers uses the hydrophobic group only as a flexible linkage in holding the ion bearing group relative to the stationary

phase surface, but this hydrophobic group linkage preferably has no participation in the separation process.

On the other hand, the hydrophobic group in the stationary phase invention of Claim 8 actively participates in the reverse phase separation. Having both an ionic (ionizable) group and a hydrophobic functional group, as claimed in this invention, makes possible a dual interactive synergy of both hydrophobic and electrostatic forces working in the separation.

Ayers further provides for affinity chromatography, not noted for being of the high performance adsorption chromatography.

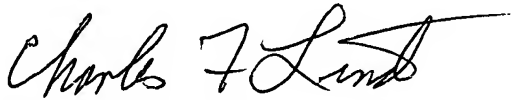
The O'Gara article further presents a polar imbedded group as a component of many bonded phases for HPLC (figure 2), but those groups are non ionic.

It thus seems apparent that adding the O'Gara summarized thirty year old technology of using octadecyl and octyl groups as traditional reverse phase ligands to the reversed orientation of the Ayers interconnected ion bearing and hydrophobic functional groups, would not yield the stationary phase recited in amended Claim 8. It further seems apparent that the thirty year background of using related components would be strong evidence that the claimed

invention is not obvious, but represents a significant invention over the cited prior art.

Favorable consideration of the application as now presented is requested. The undersigned would welcome the examiner's call if such could help in the examination and prosecution of the application.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Charles F. Lind". The signature is written in dark ink and is positioned above the printed name.

Charles F. Lind

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